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```

1  gactccgggt  ggcaggcgcc  cgggggaatc  ccagctgact  cgctcactgc  cttcgaagtc
61  cggcgccccc  cgggaggga  ctgggtggcc  gcacctccc  ggctgcggtg  gctgtcgccc
121  ccaccctgc  agccaggact  cgatggagaa  tccattccaa  tatatggcca  tgtggctctt
181  tggagcaatg  ttccatcatg  ttccatgctg  ctgctgacgt  cacatggagc  acagaaatca
241  atgttagcag  atagccagcc  catacaagat  cgtattgtat  ttagaggagg  atcgtggatg
301  gatggctgct  gaaacccct  tgccatagcc  agctcttctt  caatacttaa  ggatttacgg
361  tggctttgag  taatgagaat  ttcgaaacca  catttgagaa  gtatttccat  ccagtgtctac
421  ttgtgtttac  ttctaaacag  tcattttcta  actgaagctg  gcattcatgt  cttcattttg
481  ggctgtttca  gtgcagggt  tcctaaaca  gaagccaact  gggatgaatg  aataagtgat
541  ttgaaaaaaa  ttgaagatct  tattcaatct  atgcataatg  atgctacttt  atatacggaa
601  agtgatgttc  acccagttg  caaagtaaca  gcaatgaagt  gctttctctt  ggagttacaa
661  gttatttcac  ttgagtcgg  agatgcaagt  attcatgata  cagtagaaaa  tctgatcatc
721  ctagcaaaa  acagtttgtc  ttctaattgg  aatgtaacag  aatctggatg  caaagaatgt
781  gaggaactgg  aggaaaaaa  tattaaagaa  tttttgcaga  gttttgtaca  tattgtccaa
841  atgttcatca  acacttcttg  attgcaattg  attcttttta  aagtgtttct  gttattaaca
901  aacatcactc  tgctgcttag  acataacaaa  acactcggca  tttcaaatgt  gctgtcaaaa
961  caagtttttc  tgtcaagaag  atgacagac  ctggatcag  atgaactctt  agaaatgaag
1021  gcagaaaaat  gtcattgagt  aatatagtga  ctatgaactt  ctctcagact  tactttactc
1081  atttttttaa  tttattattg  aaattgtaca  tatttgtgga  ataattgtaa  atgttgaata
1141  aaaatatgta  caagtgttgt  tttttaagt  gactgatat  tttacctctt  attgcaaaaat
1201  agcatttgtt  taagggtgat  agtcaaat  ta  ttttgtgtg  gggctgggta  ccaatgctgc
1261  aggtcaacag  ctatgctggt  aggtcctgc  cagtgtggaa  ccactgacta  ctggctctca
1321  ttgacttcct  tactaagcat  agcaaacaga  ggaagaattt  gttatcagta  agaaaaagaa
1381  gaactatatg  tgaatcctct  tcttttact  gtaatttagt  tattgatgta  taaagcaact
1441  gttatgaaat  aaagaaattg  caataactgg  caaaaaaaaa  aaaaaaaaa  aaaaaa

```

SEQ ID NO : 1 **Human IL-15 wild-type mature IL-15 (CDS from 373 to 861)**

FIGURE 1A

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1	NWVNVISDLK	KIEDLIQSMH	IDATLYTESD
		44	52
31	VHPSCKVTAM	KCFLLELQVI	SLESGDASIH
	64	69	
61	DTV ENLI ILA	NNSLSSNGNV	TESGCKECEE
91	LEEKNIKEFL	QSFVHIVQMF	INTS

SEQ ID NO :2**Human wild-type mature IL-15****FIGURE 1A (end)**

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	646	672	
	ctc ttg gag tta caa gtt att tca ctt		<u>SEQ ID NO:3</u>
peptide 1:	45	51 52	
	L L E L Q V I S L		<u>SEQ ID NO:4</u>
	706	720	
	gaa aat ctg atc atc		<u>SEQ ID NO:5</u>
peptide 2:	64 65 68		
	E N L I I		<u>SEQ ID NO:6</u>
	706	723	
	gaa aat ctg atc atc cta		<u>SEQ ID NO:66</u>
peptide 2a:	64 65 69		
	E N L I I L		<u>SEQ ID NO:67</u>

FIGURE 1B

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      45          51 52
peptide 1 :  L L E L Q V I S L      SEQ ID NO :4

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-----mutant peptides-----

L D E L Q V I S L	<u>SEQ ID NO :7</u>
L E E L Q V I S L	<u>SEQ ID NO :8</u>
L K E L Q V I S L	<u>SEQ ID NO :9</u>
L R E L Q V I S L	<u>SEQ ID NO :10</u>
L L E L Q V I D L	<u>SEQ ID NO :11</u>
L L E L Q V I E L	<u>SEQ ID NO :12</u>
L L E L Q V I K L	<u>SEQ ID NO :13</u>
L L E L Q V I R L	<u>SEQ ID NO :14</u>
L L E L Q V I S D	<u>SEQ ID NO :15</u>
L L E L Q V I S E	<u>SEQ ID NO :16</u>
L L E L Q V I S K	<u>SEQ ID NO :17</u>
L L E L Q V I S R	<u>SEQ ID NO :18</u>

Figure 2A

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peptide 2 :	64 65 68 E N L I I	<u>SEQ ID NO :6</u>
-----mutant peptides-----		
	K N L I I	<u>SEQ ID NO :19</u>
	R N L I I	<u>SEQ ID NO :20</u>
	E D L I I	<u>SEQ ID NO :21</u>
	E E L I I	<u>SEQ ID NO :22</u>
	E K L I I	<u>SEQ ID NO :23</u>
	E R L I I	<u>SEQ ID NO :24</u>
	E N L I D	<u>SEQ ID NO :25</u>
	E N L I E	<u>SEQ ID NO :26</u>
	E N L I K	<u>SEQ ID NO :27</u>
	E N L I R	<u>SEQ ID NO :28</u>

Figure 2B

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLDELQVI SLESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEE
91 LEEKNIKEFL QSFVHIVQMF INTS

L45D SEQ ID NO :29

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLEELQVI SLESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEE
91 LEEKNIKEFL QSFVHIVQMF INTS

L45E SEQ ID NO :30

FIGURE 2C

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLKELQVI SLESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

L45K SEQ ID NO :31

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLRELQVI SLESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

L45R SEQ ID NO :32

FIGURE 2C (continued)

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI DLESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

S51D SEQ ID NO :33

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI ELESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

S51E SEQ ID NO :34

FIGURE 2C (continued)

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI KLESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEE
91 LEEKNIKEFL QSFVHIVQMF INTS

S51K SEQ ID NO :35

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI RLESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEE
91 LEEKNIKEFL QSFVHIVQMF INTS

S51R SEQ ID NO :36

FIGURE 2C (continued)

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLLELQVI SDESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

L52D SEQ ID NO :37

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLLELQVI SEESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

L52E SEQ ID NO :38

FIGURE 2C (continued)

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SKESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEE
91 LEEKNIKEFL QSFVHIVQMF INTS

L52K SEQ ID NO :39

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SRESGDASIH
61 DTVENLIILA NNSLSSNGNV TESGCKECEE
91 LEEKNIKEFL QSFVHIVQMF INTS

L52R SEQ ID NO :40

FIGURE 2C (end)

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1	NWVNVISDLK	KIEDLIQSMH	IDATLYTESD
31	VHPSCKVTAM	KCFLLELQVI	SLESGDASIH
61	DTVKNLIILA	NNSLSSNGNV	TESGCKECE
91	LEEKNIKEFL	QSFVHIVQMF	INTS

E64K SEQ ID NO :41

1	NWVNVISDLK	KIEDLIQSMH	IDATLYTESD
31	VHPSCKVTAM	KCFLLELQVI	SLESGDASIH
61	DTVRNLIILA	NNSLSSNGNV	TESGCKECE
91	LEEKNIKEFL	QSFVHIVQMF	INTS

E64R SEQ ID NO :42**FIGURE 2D**

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVEDLIILA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

N65D SEQ ID NO :43

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVEELIILA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

N65E SEQ ID NO :44

FIGURE 2D (continued)

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVEKLIILA NNSLSSNGNV TESGCKECEE
91 LEEKNIKEFL QSFVHIVQMF INTS

N65K SEQ ID NO :45

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVERLIILA NNSLSSNGNV TESGCKECEE
91 LEEKNIKEFL QSFVHIVQMF INTS

N65R SEQ ID NO :46

FIGURE 2D (continued)

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVENLIDLA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

I68D SEQ ID NO :47

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVENLIELA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

I68E SEQ ID NO :48

FIGURE 2D (continued)

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVENLIKLA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

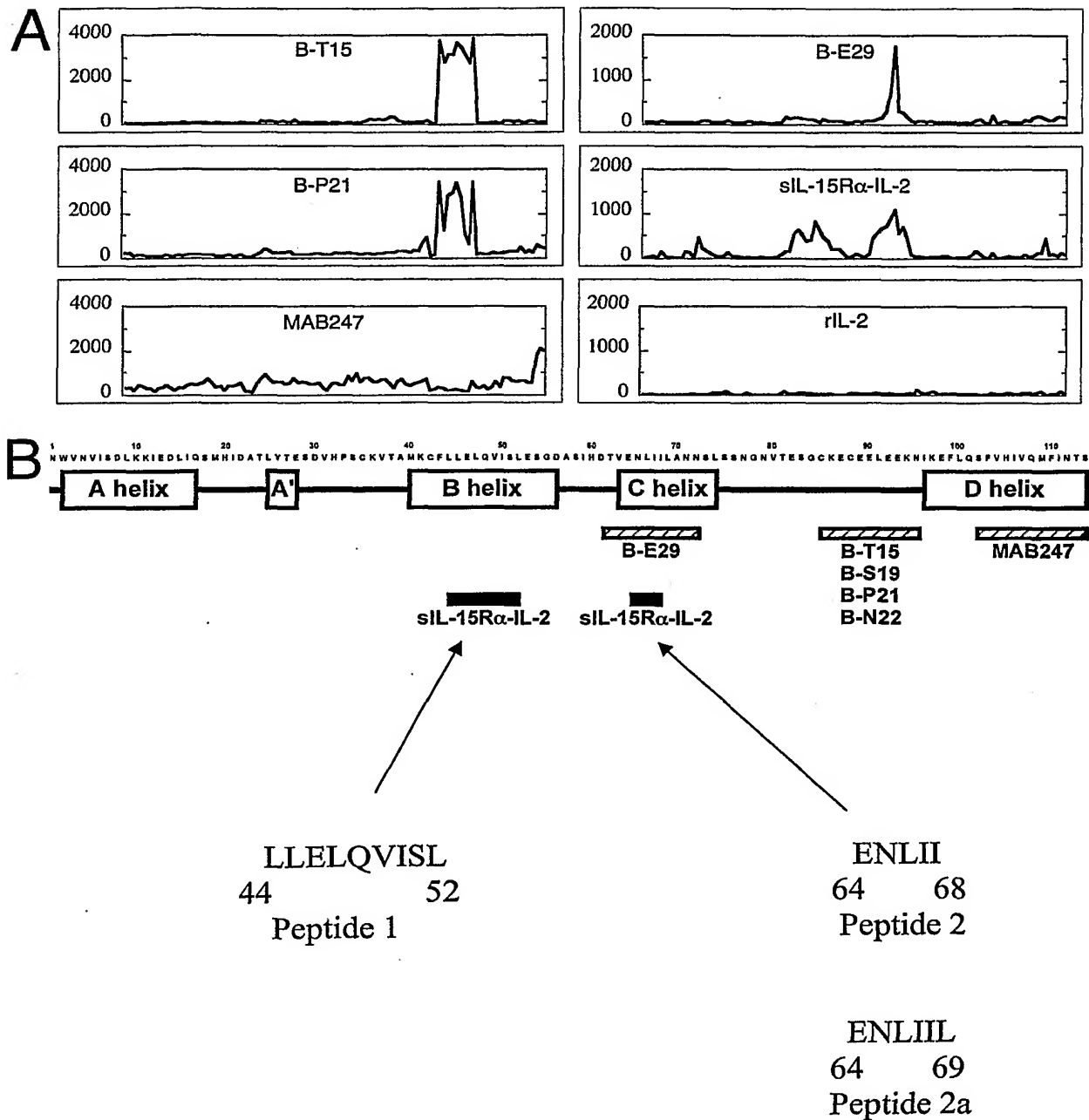
I68K SEQ ID NO :49

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVENLIRLA NNSLSSNGNV TESGCKECEEE
91 LEEKNIKEFL QSFVHIVQMF INTS

I68R SEQ ID NO :50

FIGURE 2D (end)

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FIGURES 3A and 3B

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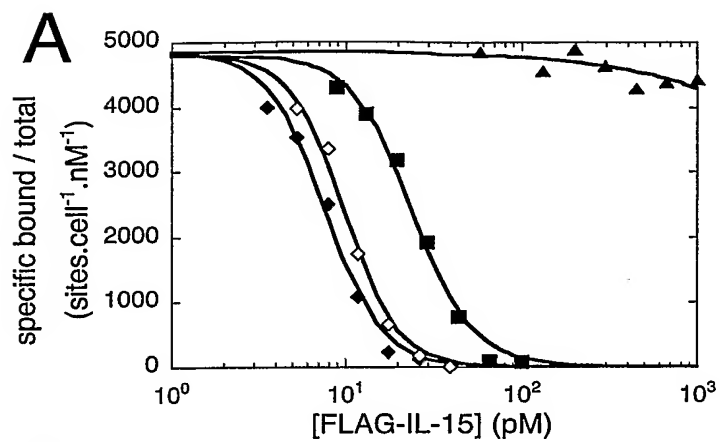


FIGURE 4A

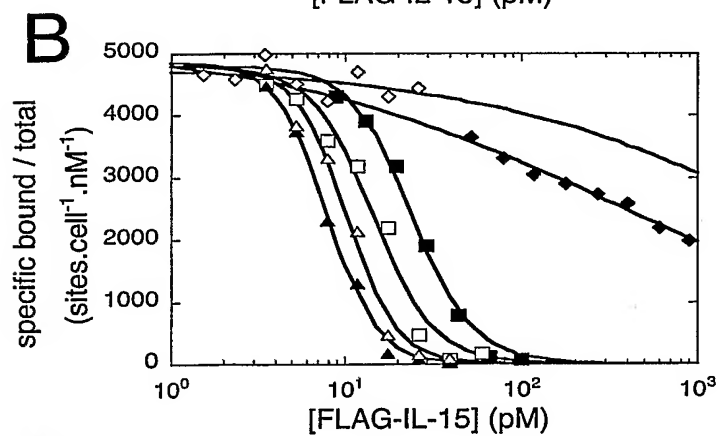


FIGURE 4B

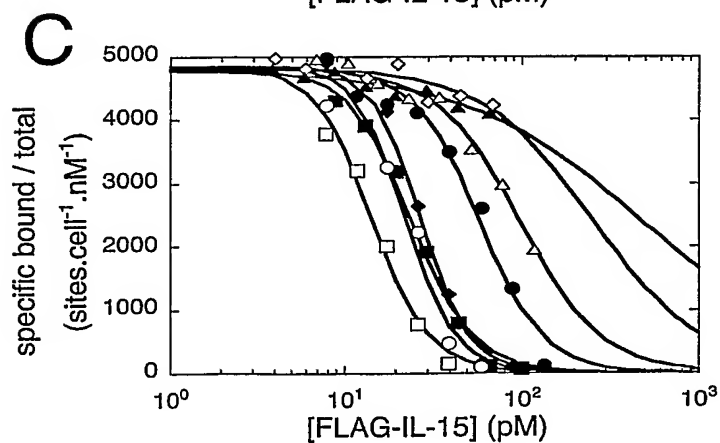


FIGURE 4C

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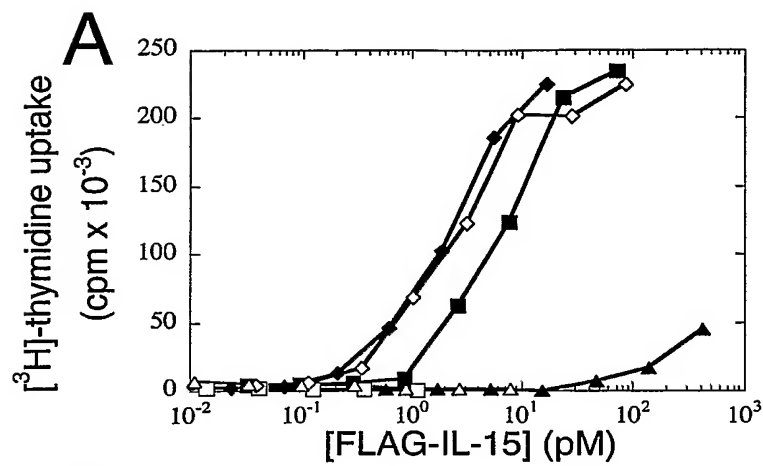


FIGURE 5A

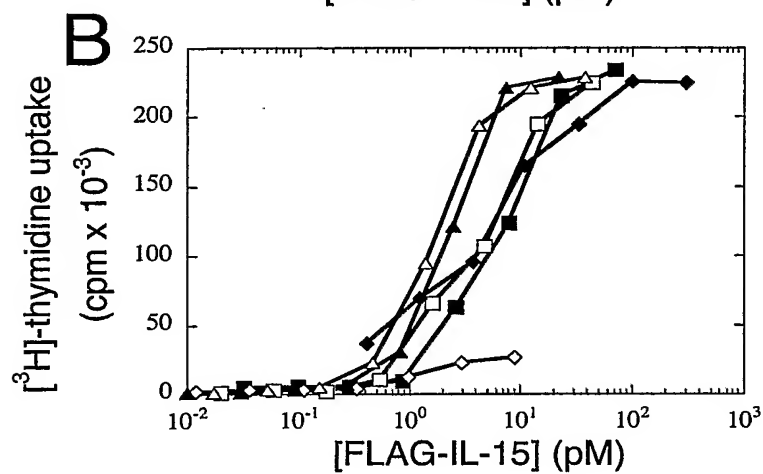


FIGURE 5B

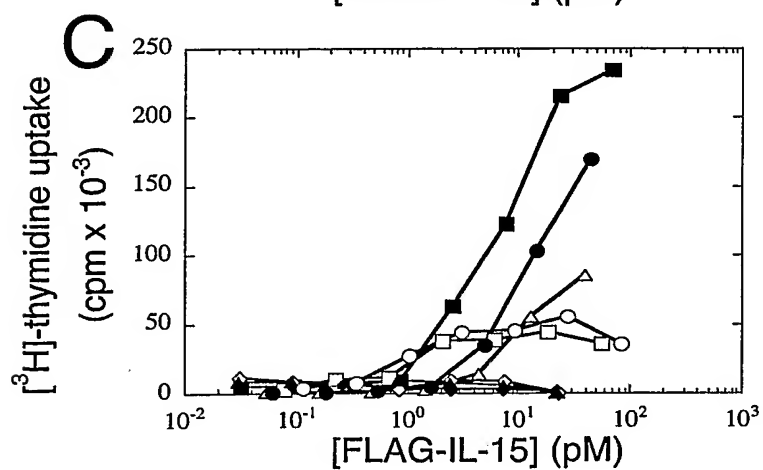
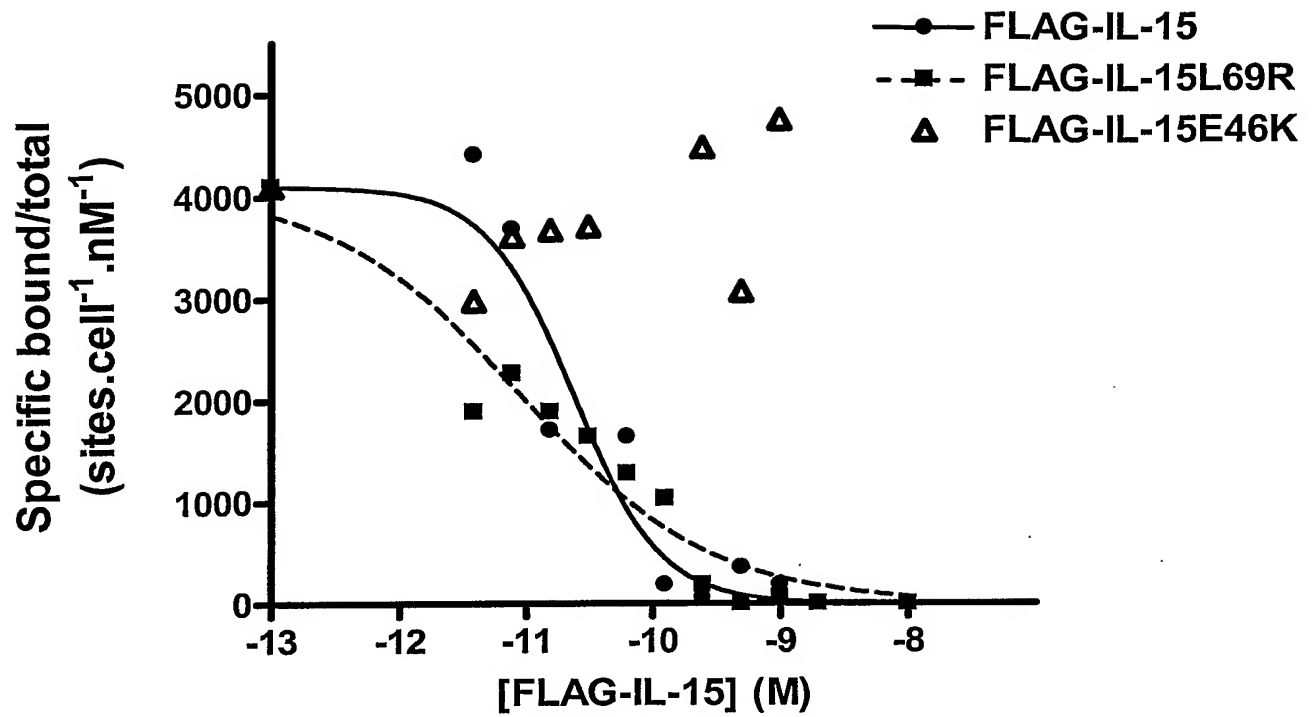
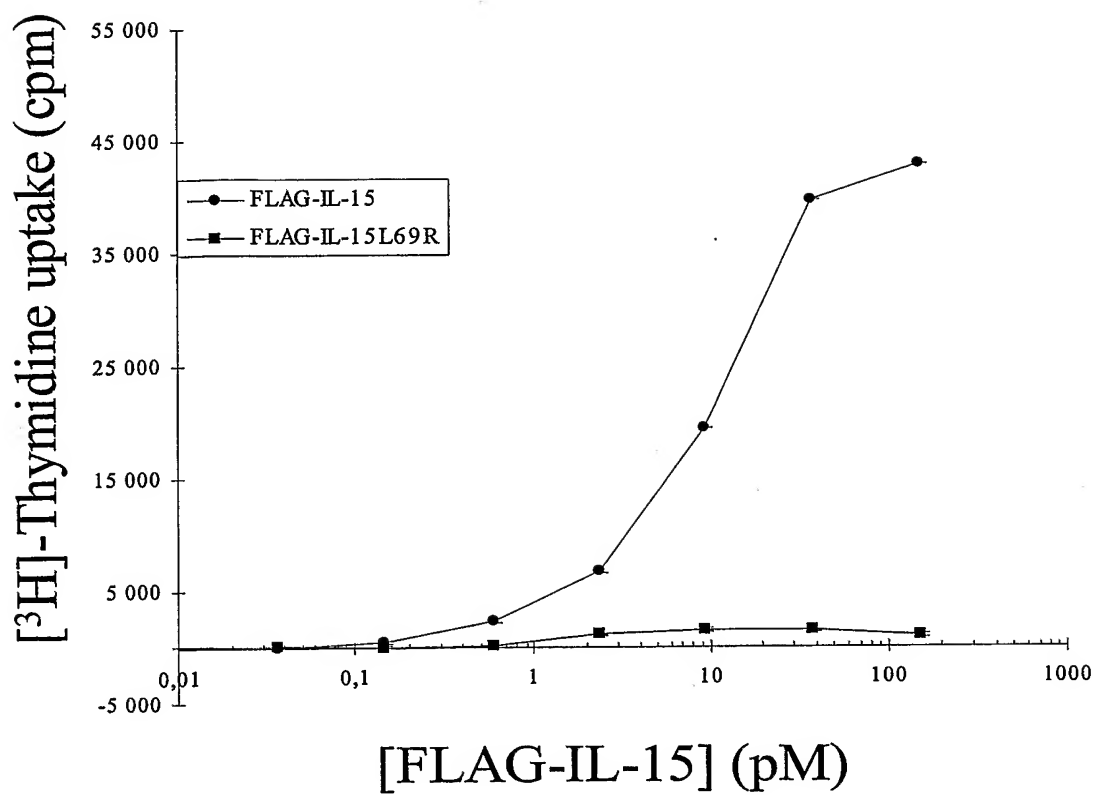


FIGURE 5C

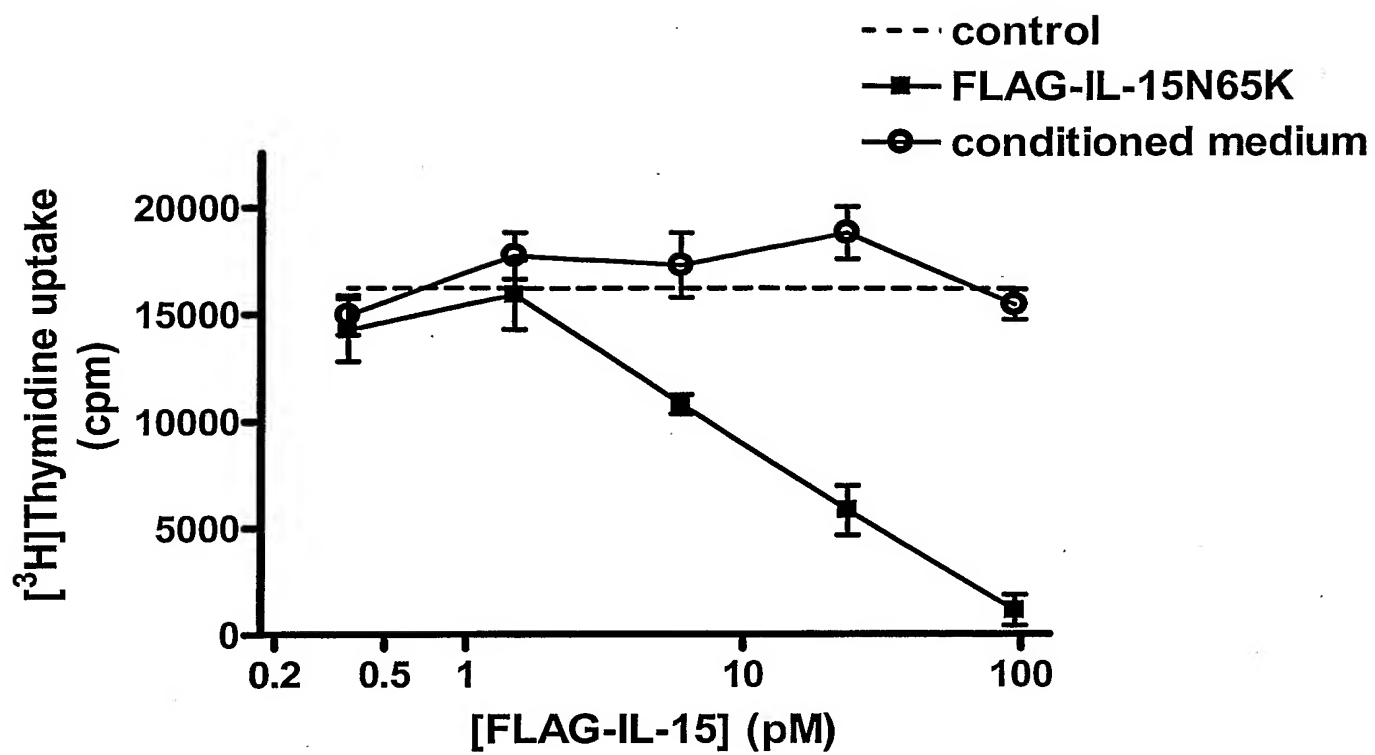
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**FIGURE 6**

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**FIGURE 7**

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**FIGURE 8**

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVENLIIDA NNSLSSNGNV TESGCKECE
91 LEEKNIKEFL QSFVHIVQMF INTS

L69D SEQ ID NO :82

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVENLIIEA NNSLSSNGNV TESGCKECE
91 LEEKNIKEFL QSFVHIVQMF INTS

L69E SEQ ID NO :83

FIGURE 10

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1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVENLIIKA NNSLSSNGNV TESGCKECE
91 LEEKNIKEFL QSFVHIVQMF INTS

L69K SEQ ID NO : 84

1 NWVNVISDLK KIEDLIQSMH IDATLYTESD
31 VHPSCCKVTAM KCFLLELQVI SLESGDASIH
61 DTVENLIIRA NNSLSSNGNV TESGCKECE
91 LEEKNIKEFL QSFVHIVQMF INTS

L69R SEQ ID NO : 85

FIGURE 10 (end)